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OPTIMIZED DRIVE TRAIN FOR A TURBINE DRIVEN ELECTRICAL MACHINE

Abstract

A rotor in a electrical machine comprises a magnetic core having at least two poles, a plurality of winding assemblies, one for each pole, and a damper winding enclosing at least a portion of the magnetic core and winding assemblies. The damper winding has (i) a plurality of electrically conductive rings concentric with a rotational axis of the magnetic core and (ii) a plurality of bars extending parallel to the rotational axis of the magnetic core and connecting to each of the rings. A radially outward surface of each of the bars is connected to a respective radially inner surface of each of the rings. A spindle of the magnetic core has first and second flat surfaces extending perpendicular to a direct axis of the magnetic core. The magnetic core may include first and second projections extending in opposite directions along the quadrature axis.